

CLAIMS

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1. System for drying objects, comprising:

a) a drying cubicle including at least one section in which the objects are exposed to hot air;

5 b) a heating device which heats the hot air introduced into the drying cubicle,

characterised in that

10 c) the heating device includes at least one high temperature fuel cell (10) the process waste air from which can be fed to the drying cubicle (1) as hot air;

d) there is provided a control system which

15 da) so operates the high temperature fuel cell (10) regardless of the electrical energy generated thereby that the thermal energy generated thereby meets the requirement in the drying cubicle (1);

db) supplies whatever quantity of electrical energy is generated by the high

temperature fuel cell (10) to other
electrical consumers.

2. System according to claim 1, characterised in that
the control system utilises the electrical energy
5 of the high temperature fuel cell (10) primarily
for electrical consumers (6, 12, 15) belonging to
the system itself and secondarily for electrical
consumers located outside the system.
3. System according to claim 2, characterised in that
10 the control system utilises the electrical energy
of the high temperature fuel cell (10) within the
system itself primarily for the electrical
consumers (6) used for heat generation, for
example, infrared radiators, and secondarily for
15 other electrical consumers, for example, electrical
drives.
4. System according to any one of the preceding
claims, characterised in that the control system
supplies the surplus electrical energy of the high
20 temperature fuel cell (10) not consumed in the
system itself primarily to an energy accumulator
and secondarily to the general electrical mains
supply.
5. System according to any one of the preceding
25 claims, characterised in that there is provided a

regenerative post-combustion device (11) to which air extracted from the drying chamber (1) and containing hydrocarbon is fed for purification.

- 5 6. Method according to claim 5, characterised in that a heat exchanger (14) is provided in which a thermal exchange takes place between hot air drawn from the regenerative post-combustion device (11) and air drawn from the ambient atmosphere and fed to the drying cubicle (1).
- 10 7. Method for drying objects, wherein air is heated and the objects are subjected to the influence of the heated air,
- characterised in that:
- 15 a) the process waste air from a high temperature fuel cell (10) is used as hot air;
- b) the high temperature fuel cell (10) is operated according to the requirement for thermal energy of the drying process regardless of the electrical energy generated by said high
- 20 temperature fuel cell (10);
- c) the electrical energy generated by the high temperature fuel cell (10) is fed in whatever quantity is obtained to electrical consumers.

8. Method according to claim 7, characterised in that the electrical energy of the high temperature fuel cell (10) is utilised primary for electrical consumers (6, 12, 15) belonging to the system itself and secondarily for electrical consumers located outside the system.
9. Method according to claim 7 or 8, characterised in that the electrical energy of the high temperature fuel cell (10) is utilised within the system itself primarily for the electrical consumers (6) used for heat generation, for example, infrared radiators, and secondarily for other electrical consumers, for example, electrical drives.
10. Method according to any one of claims 7 to 9, characterised in that the surplus electrical energy of the high temperature fuel cell (10) not consumed in the system itself is supplied primary to an energy accumulator and secondarily to the general electrical mains supply.
11. Method according to any one of claims 7 to 10, characterised in that the air produced during drying and containing hydrocarbon is post-combusted regeneratively.
12. Method according to claim 11, characterised in that the air heated by post-combustion is used for

heating air which is drawn from the ambient atmosphere and fed to the drying process.

13. Method according to any one of claims 7 to 12,
characterised in that upon attainment of the
5 operating temperature of the fuel cell (10) the
fuel gas is heated at least partially by electrical
energy supplied from the fuel cell (10) itself.
14. Method according to any one of claims 7 to 13,
characterised in that the process waste air from
10 the high temperature fuel cell (10) forms an inert
atmosphere in the drying cubicle (1).